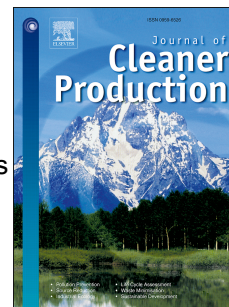


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# Comparison of current practices for a combined management of printed circuit boards from different waste streams

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## Abstract

Waste electrical and electronic equipment and end of life vehicles are two of the main sources of solid waste (after municipal solid waste), in terms of both volume and growth rate. Although they have begun to be adequately regulated worldwide, the management of printed circuit boards embedded into them still presents many challenges. One of these challenges is related to the management of automotive electronic waste. The development of the automotive industry enabled the wide application of electronics within cars. This way, the similarity with electrical and electronic equipments have increased during the last decades, especially considering the presence of printed circuit boards. In spite of these increasing similarities, the treatment of waste printed circuit boards from both electrical and electronic equipments and end-of-life vehicles still follows quite different paths. The aim of this paper is to highlight the unsustainability of their different treatment. A comparison of current practices and a quantification of potential improvements arising from a combined management of printed circuit boards are described within the paper, in terms of both volume and profit. The results demonstrate, even if only theoretically, how a change in managing waste printed circuit boards could offer interesting business opportunities.

**Keywords:** Waste Printed Circuit Boards; Waste Electrical and Electronic Equipment; End of Life Vehicles; Waste Management; Unsustainable Practices.

## 1. Introduction

Waste electrical and electronic equipment (WEEE) and end-of-life vehicles (ELVs) – the two waste streams taken into account within this paper – are among the main sources of secondary raw materials [(Eurostat, 2015a); (Eurostat, 2015b)]. Based on official estimates, their annual volumes vary –

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